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1913

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NEW ENGINEERING
BUILDINGS AT
MINNESOTA

New Engineering Buildings at Minnesota

BY

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*Reprinted from
The Bent of Tau Beta Pi
April, 1913*



ENGINEERING LIBRARY

NEW ENGINEERING BUILDINGS AT MINNESOTA

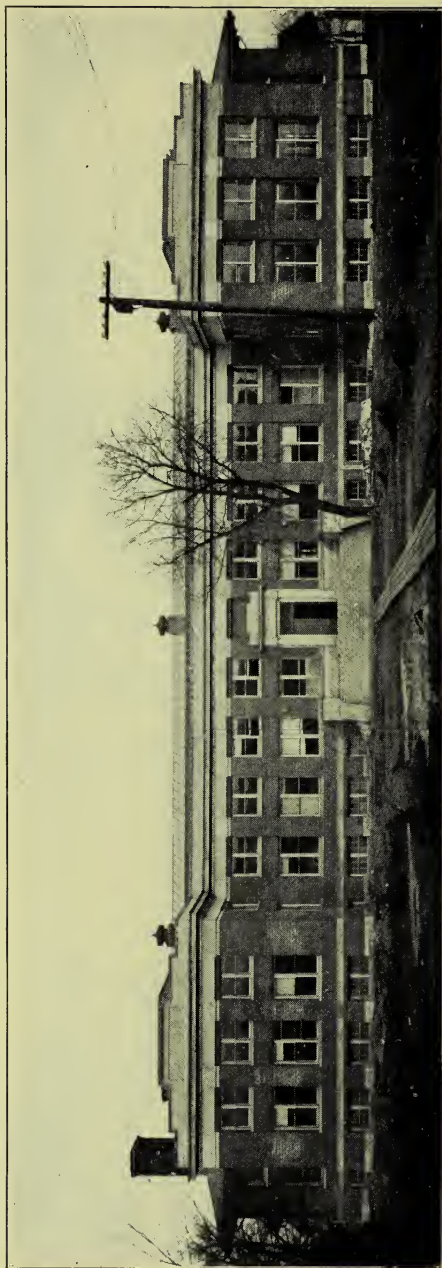
BY F. C. SHENEHON, HON. MINN. ALPHA

The College of Engineering of the University of Minnesota has recently completed two large, adequate, well-planned, beautiful buildings. The Experimental Engineering Building was first in use in September 1911, the main Engineering Building was ready for the school year beginning in September 1912. The completion of these two buildings marks an epoch in the history and growth of the college. It marks progress towards the full complement of buildings, projected to meet the ultimate needs of the college. The completed group under the Cass Gilbert Plans embraces ten Engineering buildings; nine of these buildings form a square, in the center of which is the Main Engineering Building. That portion of the Campus allotted to the Engineering Group comprises ten acres, and lies to the north of Washington Avenue, and is accessible by the Interurban electric railway, which connects Minneapolis and St. Paul. It is just twenty minutes from the heart of the business section of Minneapolis, and just forty minutes from that of St. Paul, to the engineering group.

The Main Engineering Building as its name implies serves the general or common purposes of the college. It houses the offices of administration, the central engineering library, the college auditorium, welfare rooms for the students, and many class rooms, lecture rooms and drafting rooms that are used by architects and engineers of all degrees.

The main Engineering Building is 231 feet long in the body and 65 feet in least width; in addition are two wings on the east side of the building, 70 x 40 feet. The north wing is devoted exclusively to the Central Engineering Library. The south wing is devoted exclusively to well-lighted, large drafting rooms.

The body of the building is of three main floors, above a commodious well lighted basement, and under this a sub-basement



EXPERIMENTAL ENGINEERING LABORATORY

space for pipes and conduits. The architectural style is Italian Renaissance; and the materials used are Colonial brick in masses, with Bedford stone up to the first story and in the cornice and trimmings. The brick is laid in Dutch bond, with three-quarter inch joints hollowed out. The combination of Colonial brick and Bedford stone is most attractive, the reds and purples of the brick giving a warmth of tone very grateful in the latitude of Minnesota.

The basement is utilized for student welfare rooms, locker rooms, toilet rooms, blue print, storage and research rooms, and instrument and calibration rooms for the civil engineers. The basement under the north wing is used as a stack room in connection with the library, and has a capacity of 40,000 volumes. The basement of the south wing is a light wholesome drafting room.

The first floor is largely devoted to recitation and lecture rooms, and to the offices of members of the faculty. In addition the offices of the Dean of the College with adjoining committee room are on this floor; and special light and dark lecture rooms adapted to the use of technical societies are centralized here.

In the north wing as previously stated is the beautiful engineering library. This room extends through two floors, with a balcony at the level of the second floor, and has over-head skylight. On the first floor the alcove system is used. All second story windows are blanked, so that the whole outside wall space is devoted to book shelves. The balcony is made additionally useful and attractive by a reading desk on all four sides of the balcony overhang. The library is finished in fumed oak with some elaborate carving, and the plaster work of the cornice and ceiling beams is finished in ivory white. The floors are of battleship linoleum laid on concrete slabs and are noiseless. The deep green of the floor covering and of the balcony rail, with the rich brown of the fumed oak, and the white above, give a color scheme of great richness.

The book capacity of the gallery is 10,000 volumes, and that of the first floor the same. This with the stack capacity of the basement already mentioned gives an aggregate book capacity of 60,000 volumes.

The second floor is devoted almost exclusively to recitation,



MAIN ENGINEERING BUILDING

lecture and drafting rooms, and offices. A particular feature of this floor is the post-senior civil engineers' room. The post seniors are the fifth year men who have received at the end of their fourth year the degree of Bachelor of Science in engineering. It was thought that they should receive somewhat more dignified treatment than is accorded to the regular engineering students. In accordance with this view each man has his individual fumed oak desk, and his individual place at a drafting table built for two. Ultimately individual drafting tables will replace the large tables. A smaller room on the same floor is fitted up in the same way and devoted to the post-senior mechanical engineers. The post-senior electrical engineers have their office in the electrical building. The corridors of the second and third floors are of battleship linoleum the same as that already mentioned in the library. The first floor corridor is of white ceramic tile with green border.

The north drafting room of the third floor, and this is over the post-senior civil room, is devoted to structural and other work of the senior civil engineers. The east rooms on this floor are devoted to architectural work. Other rooms are devoted to architectural studios and cast rooms. Some lecture and recitation rooms come on this floor and a dark projection room is also provided. Finally the auditorium of the college with a seating capacity of four hundred persons is on this third floor.

The building has been constructed with a view of ultimately adding a roof house as the demand for more space for Architecture becomes apparent.

It should be added that the building is provided with three big vaults for the records of the college itself, those of the civil department and the department of drawing. In addition to those mentioned, the departments of mathematics and mechanics, and architecture are housed in this building.

Structurally the building is fully fire proof throughout. The floors are of reinforced concrete using the mushroom system. The building is adequately provided with artificial ventilation on the plenum system, and the toilet rooms have exhaust ventilation as well. For heating purposes the direct radiation of the room is sufficient with the fans at rest. With the fans in motion the air is tempered, washed, heated and forced in generous quantities to



RECITATION ROOM WITH OPAQUE PROJECTION LANTERN



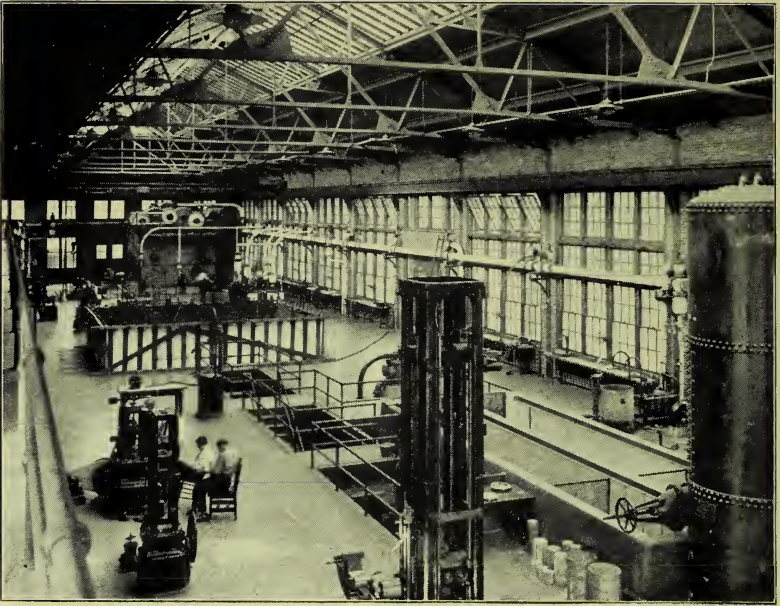
POST SENIOR CIVIL ENGINEERS' OFFICE

the various rooms of the building. The building is electrically lighted, drafting rooms and the auditorium utilizing the indirect system. As the building is central in the group it is provided with entrances at each end, and midway on each side of the building.

EXPERIMENTAL LABORATORY

The Experimental Engineering Building is located on the east margin of the engineering campus along Union Street. Its front entrance looks to the westward and to the symmetrical entrance of the main engineering building. The building itself is of the same length as the main engineering building, and its body of practically the same width. For office and recitation room space two wings reach towards the wings of the main engineering building. This arrangement carries out the suggestion of a secondary quadrangle. The building has a basement and two stories.

The main room in the body of the building has inside dimensions of about 57 x 227 feet. It is all one large beautiful room reaching to the roof with overhead sky-lighting. The walls are of buff enameled brick. The cement floor is of Nile green. This combination of colors makes the room most attractive as a place to work in. The main floor is of heavy reinforced concrete so designed that an engine may be placed anywhere without considering any further foundations or supports. Down the center of the room are hatchways or openings looking into the basement. These have value for better lighting of the basement, better ventilation and better access. On the main laboratory floor a water tube boiler of 150 horse power carrying 250 pounds of steam pressure provides steam to a main leading southward along the east wall. Next to the boiler are experimental engines, then come steam operated pumps, motor driven pumps, a hydraulic tank and weir and water measuring devices of various kinds. In the southwest corner is the big materials-testing machine for breaking beams and columns; and smaller machines of the same kind are adjacent. Towards the north end of the room on the west side are gas and gasoline and heat engines of various types, and opposite the boiler in the northwest corner is a testing floor where engines may be brought in for tests and experimentation. This bringing in of engines is facilitated by a 10 ton crane which



EXPERIMENTAL ENGINEERING LABORATORY



CEMENT TEST LABORATORY

travels the full length of the building. In the basement are rooms for the testing of road materials, cements and concretes, a fine wash room with shower baths, a locker room, store rooms, and research and thesis rooms.

On the second floor level a balcony overlooks the main laboratory floor. From this balcony floor, recitation and computing rooms open, and the museum of broken specimens, which is yet to be established.

The Experimental Department is destined to perform a most useful function for the state as well as for the college. Plans are maturing for large use of this laboratory as an experiment station working for the higher efficiency of industrial, municipal and state enterprises in Minnesota. The experimental department is for the use of all other departments of the college, and electrical engineers, mechanical engineers, civil engineers and architects all receive work in this beautiful laboratory building.



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